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(FILE 'HOME' ENTERED AT 17:56:35 ON 23 DEC 2005)

FILE 'CAPLUS' ENTERED AT 17:57:00 ON 23 DEC 2005

L1 1 S US6693187/PN  
SELECT L1 1 RN  
L2 37905 S E1-E56

FILE 'REGISTRY' ENTERED AT 17:57:31 ON 23 DEC 2005

L3 1 S 411234-01-0/RN  
SET NOTICE 1 DISPLAY  
SET NOTICE LOGIN DISPLAY

FILE 'REGISTRY' ENTERED AT 17:57:54 ON 23 DEC 2005

L4 1 S 411234-02-1/RN  
SET NOTICE 1 DISPLAY  
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L5 1 S 411234-04-3/RN  
SET NOTICE 1 DISPLAY  
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FILE 'REGISTRY' ENTERED AT 17:58:24 ON 23 DEC 2005

L6 1 S 411234-26-9/RN  
SET NOTICE 1 DISPLAY  
SET NOTICE LOGIN DISPLAY

FILE 'CAPLUS' ENTERED AT 17:58:57 ON 23 DEC 2005

L7 2 S L6

FILE 'REGISTRY' ENTERED AT 18:01:45 ON 23 DEC 2005

SET NOTICE 1 DISPLAY  
SET NOTICE LOGIN DISPLAY

FILE 'REGISTRY' ENTERED AT 18:02:17 ON 23 DEC 2005

L8 1 S 411234-22-5/RN  
SET NOTICE 1 DISPLAY  
SET NOTICE LOGIN DISPLAY

FILE 'CAPLUS' ENTERED AT 18:02:53 ON 23 DEC 2005

L9 2 S L8

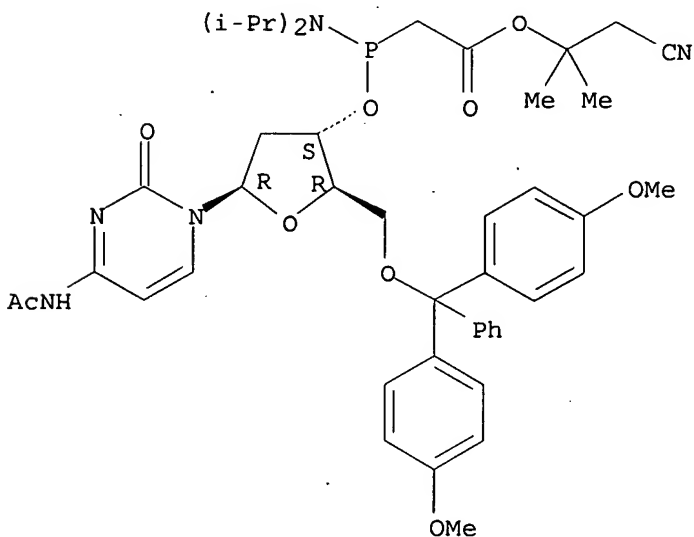
FILE 'USPATFULL, USPAT2' ENTERED AT 18:03:10 ON 23 DEC 2005

L10 2 S L6 OR L8

*checked  
Jiang*

L8 ANSWER 1 OF 1 REGISTRY COPYRIGHT 2005 ACS on STN  
 RN 411234-22-5 REGISTRY  
 CN Cytidine, N-acetyl-5'-[bis(4-methoxyphenyl)phenylmethyl]-2'-deoxy-,  
 3'-[P-[2-(2-cyano-1,1-dimethylethoxy)-2-oxoethyl]-N,N-bis(1-  
 methylethyl)phosphonamidite] (9CI) (CA INDEX NAME)  
 FS STEREOSEARCH  
 MF C45 H56 N5 O9 P  
 SR CA  
 LC STN Files: CA, CAPLUS, CASREACT, TOXCENTER, USPATFULL  
 DT.CA Caplus document type: Journal; Patent  
 RL.P Roles from patents: PREP (Preparation); RACT (Reactant or reagent)  
 RL.NP Roles from non-patents: PREP (Preparation); RACT (Reactant or reagent)

Absolute stereochemistry.



\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

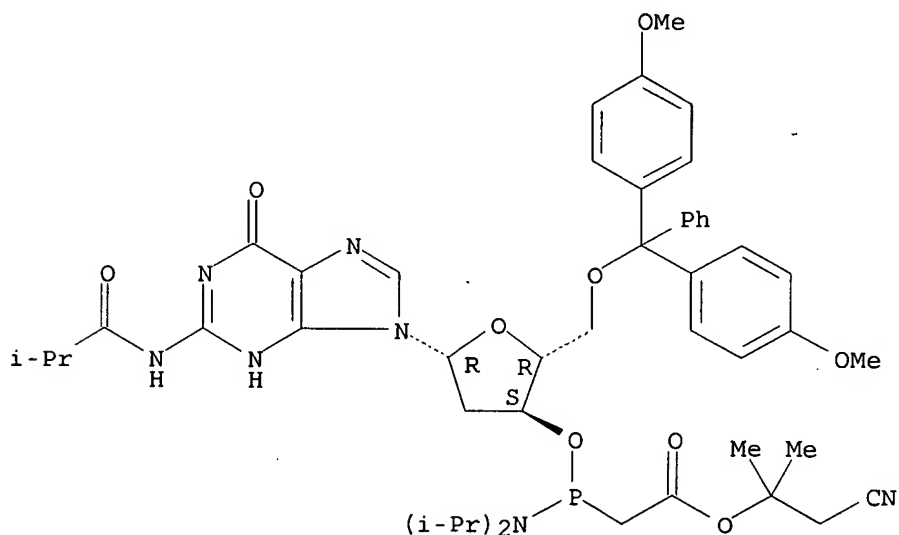
2 REFERENCES IN FILE CA (1907 TO DATE)  
 2 REFERENCES IN FILE CAPLUS (1907 TO DATE)

=> D L6 SQIDE 1-

YOU HAVE REQUESTED DATA FROM 1 ANSWERS - CONTINUE? Y/(N):y  
THE ESTIMATED COST FOR THIS REQUEST IS 6.15 U.S. DOLLARS  
DO YOU WANT TO CONTINUE WITH THIS REQUEST? (Y)/N:y

L6 ANSWER 1 OF 1 REGISTRY COPYRIGHT 2005 ACS on STN  
RN 411234-26-9 REGISTRY  
CN Guanosine, 5'-O-[bis(4-methoxyphenyl)phenylmethyl]-2'-deoxy-N-(2-methyl-1-oxopropyl)-, 3'-[P-[2-(2-cyano-1,1-dimethylethoxy)-2-oxoethyl]-N,N-bis(1-methylethyl)phosphonamidite] (9CI) (CA INDEX NAME)  
FS STEREOSEARCH  
MF C48 H60 N7 O9 P  
SR CA  
LC STN Files: CA, CAPLUS, CASREACT, TOXCENTER, USPATFULL  
DT.CA Caplus document type: Journal; Patent  
RL.P Roles from patents: PREP (Preparation); RACT (Reactant or reagent)  
RL.NP Roles from non-patents: PREP (Preparation); RACT (Reactant or reagent)

Absolute stereochemistry.



=> d ibib 1-2

L10 ANSWER 1 OF 2 USPATFULL on STN

ACCESSION NUMBER: 2004:152465 USPATFULL

TITLE: Phosphinoamidite carboxylates and analogs thereof in the synthesis of oligonucleotides having reduced internucleotide charge

INVENTOR(S): Dellinger, Douglas J., Sunnyvale, CA, UNITED STATES

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 2004116687	A1	20040617
APPLICATION INFO.:	US 2003-721301	A1	20031124 (10)
RELATED APPLN. INFO.:	Division of Ser. No. US 2000-691824, filed on 17 Oct 2000, GRANTED, Pat. No. US 6693187		
DOCUMENT TYPE:	Utility		
FILE SEGMENT:	APPLICATION		
LEGAL REPRESENTATIVE:	REED & EBERLE LLP, 800 MENLO AVENUE, SUITE 210, MENLO PARK, CA, 94025		
NUMBER OF CLAIMS:	26		
EXEMPLARY CLAIM:	1		
NUMBER OF DRAWINGS:	9 Drawing Page(s)		
LINE COUNT:	2660		

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L10 ANSWER 2 OF 2 USPATFULL on STN

ACCESSION NUMBER: 2004:41483 USPATFULL

TITLE: Phosphinoamidite carboxylates and analogs thereof in the synthesis of oligonucleotides having reduced internucleotide charge

INVENTOR(S): Dellinger, Douglas J., Sunnyvale, CA, United States

PATENT ASSIGNEE(S): Lievre Cornu LLC, Boulder, CO, United States (U.S. corporation)

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 6693187	B1	20040217
APPLICATION INFO.:	US 2000-691824		20001017 (9)
DOCUMENT TYPE:	Utility		
FILE SEGMENT:	GRANTED		
PRIMARY EXAMINER:	Wilson, James O.		
ASSISTANT EXAMINER:	McIntosh, III, Traviss C.		
LEGAL REPRESENTATIVE:	Reed & Eberle LLP, Reed, Dianne E., Eberle, Shelley P.		
NUMBER OF CLAIMS:	12		
EXEMPLARY CLAIM:	1		
NUMBER OF DRAWINGS:	9 Drawing Figure(s); 9 Drawing Page(s)		
LINE COUNT:	2603		

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

=> s 16  
L7 2 L6

=> d ibib 1-2

L7 ANSWER 1 OF 2 CAPLUS COPYRIGHT 2005 ACS on STN  
ACCESSION NUMBER: 2003:8309 CAPLUS  
DOCUMENT NUMBER: 138:205290  
TITLE: Solid-phase chemical synthesis of phosphonoacetate and  
thiophosphonoacetate oligodeoxynucleotides  
AUTHOR(S): Dellinger, Douglas J.; Sheehan, David M.; Christensen,  
Nanna K.; Lindberg, James G.; Caruthers, Marvin H.  
CORPORATE SOURCE: Department of Chemistry and Biochemistry, University  
of Colorado, Boulder, CO, 80309-0215, USA  
SOURCE: Journal of the American Chemical Society (2003),  
125(4), 940-950  
CODEN: JACSAT; ISSN: 0002-7863  
PUBLISHER: American Chemical Society  
DOCUMENT TYPE: Journal  
LANGUAGE: English  
OTHER SOURCE(S): CASREACT 138:205290  
REFERENCE COUNT: 43 THERE ARE 43 CITED REFERENCES AVAILABLE FOR THIS  
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 2 OF 2 CAPLUS COPYRIGHT 2005 ACS on STN  
ACCESSION NUMBER: 2002:314950 CAPLUS  
DOCUMENT NUMBER: 136:325787  
TITLE: Preparation of oligodeoxyribonucleotide  
phosphinoamidite carboxylates and analogs having  
reduced internucleotide charge and enhanced nuclease  
resistance  
INVENTOR(S): Dellinger, Douglas J.  
PATENT ASSIGNEE(S): USA  
SOURCE: PCT Int. Appl., 104 pp.  
CODEN: PIXXD2  
DOCUMENT TYPE: Patent  
LANGUAGE: English  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2002032912	A2	20020425	WO 2001-US32465	20011016
WO 2002032912	A3	20030313		
W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM			
RW:	GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG			
US 6693187	B1	20040217	US 2000-691824	20001017
EP 1334111	A2	20030813	EP 2001-983160	20011016
R:	AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR			
US 2004116687	A1	20040617	US 2003-721301	20031124
PRIORITY APPLN. INFO.:			US 2000-691824	A 20001017
			WO 2001-US32465	W 20011016
OTHER SOURCE(S):	MARPAT 136:325787			

## EAST Search History

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
		(phosph?nocarbox\$ phosph?noacet\$ phosph?noform\$) and \$nucleo?ide	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2002/10/17 15:52
L1	24	536/22.1.ccls.	US-PGPUB	OR	ON	2005/12/23 13:18
L2	1021469	"6"	US-PGPUB	OR	ON	2005/12/23 13:18
L3	109	536/26.1.ccls.	US-PGPUB	OR	ON	2005/12/23 13:19
L4	54	536/27.1.ccls.	US-PGPUB	OR	ON	2005/12/23 13:19
L5	54	536/28.1.ccls.	US-PGPUB	OR	ON	2005/12/23 13:19
L6	205	1 3 4 5	US-PGPUB	OR	ON	2005/12/23 13:19
S1	1	phosphinoamid\$ and internucleotide	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/12/22 17:43
S2	2	phosphinoamid\$ and \$nucleo?ide	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2002/10/17 13:42
S3	0	phosphonoacetic and (nucleo?ide)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2002/10/17 13:43
S4	117	phosphonoacetic and (nucleo?ide)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2002/10/17 13:43
S5	12	(phosphonoacetic and (nucleo?ide)) and cyano	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2002/10/17 15:47
S6	50	phosph?nocarboxylate	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2002/10/17 15:48

## EAST Search History

S7	1370	phosph?nocarbox\$	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2002/10/17 15:48
S8	1550	phosph?noacet\$	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2002/10/17 15:48
S9	666	phosph?noform\$	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2002/10/17 15:48
S10	3395	phosph?nocarbox\$ phosph?noacet\$ phosph?noform\$	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2002/10/17 15:48
S11	100	(phosph?nocarbox\$ phosph?noacet\$ phosph?noform\$) and internucleo?ide	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2002/10/17 15:49
S12	3	(phosph?nocarbox\$ phosph?noacet\$ phosph?noform\$) and internucleo?ide	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2002/10/17 15:51
S13	593	(phosph?nocarbox\$ phosph?noacet\$ phosph?noform\$) and nucleo?ide	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2002/10/17 15:51
S14	579	((phosph?nocarbox\$ phosph?noacet\$ phosph?noform\$) and \$nucleo?ide) and synthesis	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2002/10/17 15:52
S15	196	((((phosph?nocarbox\$ phosph?noacet\$ phosph?noform\$) and \$nucleo?ide) and synthesis) and support	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2002/10/17 15:53
S16	67	(((((phosph?nocarbox\$ phosph?noacet\$ phosph?noform\$) and \$nucleo?ide) and synthesis) and support) and linkage	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2002/10/17 15:53

## EAST Search History

S17	5173	oligonucleotide adj synthesis	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2002/10/22 11:56
S18	454	(oligonucleotide adj synthesis) same deprotect\$	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2002/10/22 11:56
S19	118	((oligonucleotide adj synthesis) same deprotect\$) same hydroxyl	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2002/10/22 11:56
S20	4	((((oligonucleotide adj synthesis) same deprotect\$) same hydroxyl) same phosphitylat\$	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2002/10/22 12:01
S21	49	((((oligonucleotide adj synthesis) same deprotect\$) same hydroxyl) same coupl\$	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2002/10/22 12:03
S22	47	(((((oligonucleotide adj synthesis) same deprotect\$) same hydroxyl) same coupl\$) and monomer	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2002/10/22 12:03
S23	28	((((((oligonucleotide adj synthesis) same deprotect\$) same hydroxyl) same coupl\$) and monomer) and oxidiz\$	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2002/10/22 12:03
S24	40	((((((oligonucleotide adj synthesis) same deprotect\$) same hydroxyl) same coupl\$) and monomer) and oxidation	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2002/10/22 12:03
S25	40	((((((oligonucleotide adj synthesis) same deprotect\$) same hydroxyl) same coupl\$) and monomer) and oxidation) ((((((oligonucleotide adj synthesis) same deprotect\$) same hydroxyl) same coupl\$) and monomer) and oxidiz\$)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2002/10/22 14:24



## EAST Search History

S26	2	"4517338".pn.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2002/10/22 14:24
S27	2	"6693187".pn.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2004/09/02 22:12
S28	2	"4056673".pn.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2004/09/02 22:12
S29	4	"4415732".pn.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2004/09/02 22:12
S30	2	"4725677".pn.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2004/09/02 22:12
S31	2	"5763208".pn.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2004/09/02 22:12
S32	2	"6069243".pn.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2004/09/02 22:12
S33	12	S28 S29 S30 S31 S32	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2004/09/02 23:10
S34	464	nucleobase.clm.	USPAT	OR	ON	2004/09/02 23:11
S35	34	S34 same analog	USPAT	OR	ON	2004/09/02 23:41
S36	1141	536/25.3.ccls.	USPAT	OR	ON	2004/09/02 23:45
S37	1450	536/22.1.ccls.	USPAT	OR	ON	2004/09/02 23:45
S38	125	536/26.1.ccls.	USPAT	OR	ON	2004/09/02 23:45
S39	1545	S37 S38	USPAT	OR	ON	2004/09/02 23:45
S40	4	S39 and phosph?noamidite	USPAT	OR	ON	2004/09/02 23:46

## EAST Search History

S41	2	"6693187".pn.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/12/23 13:18
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